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Monetary and Policy with a View Towards Enhances Growth: A Study of Croatia

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White Policy Paper[1]

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1 Background

Money demand has re-emerged in importance as an equivalence between interest rate rules and money supply rules has been established in the recent monetary policy literature. Recent empirical studies of money demand continue to focus on the classic money demand functions. For transition countries the study of money demand has been more difficult because of data limitations. But, especially for the new countries joining the EU and for other "second wave" EU accession countries, studying the money demand is important since these countries must adopt inflation targeting rules in order to meet Maastricht treaty criteria for joining the Euro currency union.

This paper provides policy inputs based on an empirical study of money demand in Croatia for the period from 1994 to 2002 using IFS monthly data. It is able to establish evidence of a stable money demand function for an accession country using extensive VECM techniques. This presents a significant advance in the study of such transition countries that suggests the ability of this region to use money demand in making accession monetary policy.

Several special issues that arise with a transition country are confronted. First the data begins only after the Croatian hyperinflation of 1993 and the end of the war period so that there is reasonable confidence in the data. Second, there is a literature examining whether the Fisher equation of nominal interest rates holds, whereby an increase in the expected inflation rate leads to a proportionate increase in the nominal interest rate. If the Fisher equation does hold, then a classic type of money demand function can be specified in which real money depends on the nominal interest rate and income. However if the Fisher equation does not hold, then the link between inflation and money demand needs to be extended beyond simply including the nominal interest rate. A failure of the Fisher equation can result for example because of unexpected changes in the inflation rate that cause non-Fisherian liquidity effects. Some researchers have included the inflation rate as well as the nominal interest rate in the money demand function; this is one strategy for modelling money demand when the Fisher equation does not hold. And for the shorter time periods with uncertain

[1] This paper is a policy-summary based on Gillman, M. and Cziráky, D. (2004), Money Demand in an EU Accession Country: A VECM Study of Croatia. IPF Research Paper (under review).

expected future inflation rates that are characteristic of transition countries, failure of the Fisher equation appears more likely.

The idea that exchange rates reflect the inflation rate changes is found in the uncovered interest rate parity concept, and this is sometimes the justification for exchange rate targeting being used even within a monetary policy that aims to decrease the inflation rate. The paper here examines this alternative money demand approach to provide an additional robustness check.

2 Monetary Policy Alternatives

Croatia experienced rapid output growth after the hyperinflation of 1993 and the end of the wartime. Since then the inflation rate has trended downwards with an uptick in 1997 and 1999, while the growth rate has averaged 3% with a significant downtick in 1998. In addition, a notable downward trend in money velocity is characteristic for this period, which might be explained by the downward trend in inflation.

The monetary policy that the Croatian National Bank (CNB) used to bring down the inflation rate was based on "strict exchange rate targeting". Current CNB policy is directed toward maintaining a low inflation rate, with exchange rate targeting having a smaller role. This has included low tolerance toward the exchange rate movements with interventions to smooth exchange rate volatility. Uncertainty over the monetary policy may have been partly responsible for significant differences in the profile of the inflation and nominal interest rates over the period.

We are interested in policy objectives as monetary policy goals such as decreasing inflation or unemployment. Furthermore, it is relevant to indicate which policy instruments might be used to achieve these objectives. Monetary policymakers can use as instruments *tax rates*, *open-market operations*, *reserve requirements* and *government purchases*.

The general monetary policy options with indication of possible instruments and targets are listed in Table 1. The current Croatian monetary policy alternatives aim at assuring monetary stability and support economic growth.

Table 1. Policy objectives, indicators, instruments, and targets

Policy objectives	Indicators	Policy instruments	Targets
• Controlling inflation	• Orders of new goods	• Market operations	• Money aggregate
• Controlling exchange rate	• Prices of raw materials	• Reserve requirements	• Exchange rate
• Controlling	• Measures of	• Tax rates	• Inflation

interest rates	money		
• Decreasing unemployment	• Measures of lending	• Government purchases	• Interest rates
• Increasing output			

In terms of affecting output in the short-run thus using monetary policy as an output stabilisation tool the policy options include explicit or implicit targeting where the inflation is an alternative target to the mainly used exchange rates.

An additional policy alternative relates to using policy instruments with the aim of affecting output in the short run while keeping the long-run target on a stable path. Table 2 shows a summary of the key policy variables indicating possible policy targets. Alternative policy instruments are summarised in Table 3.

Table 2. Policy variables

Variable	Description
• Money target	• Announced target of the money aggregate
• Exchange rate	• Announced target of the exchange rate
• Inflation rate	• Announced target of the inflation
• Interest rate[1]	• Announced target of money market interest rates
• Interest rate[2]	• Announced target of the average inter-bank lending rate

The alternative views related to the policy choice of targets, where inflation and exchange rates are the considered alternatives, relate to both efficiency of targeting particular variable and to the empirical short- and long-run relationship between the targeted variable and the policy objective(s).

Table 3. Policy instruments

Variable	Description
• Market operations	• Government's market operations
• Reserve requirements	• Declared minimal reserves for commercial banks
• Tax rates	• Central bank's lending rate
• Government purchases	• Total government expenditures

4 Policy Recommendations

The main policy recommendation is in favour of the inflation rate targeting policy with and short-term stabilisation policy with a view of stimulating output growth. This is justified on the grounds of an empirically established relationship among money demand, output, interest rates, and inflation where a stable long-

run relation with a fast adjustment to the short-run was identified. Such models indicate that a long-run inflation targeting policy might be compatible with short-run interventions in the money supply and interest rates using the available policy instruments such as market operations, reserve requirements, tax rates, and government purchases. Such measures will have a short-term impact on output however there will be an adjustment to the long-run inflation target which would support monetary stability while stimulating output growth. The main conclusions are:

- Targeting of the inflation rate will be "understood" by agents within their money demand in that shocks within this framework will lead to a functional re-equilibration of money demand.

- This implies that the money market will clear in such a policy setting. In contrast, with the targeting of exchange rates, there is no stable money demand function based on such exchange rates that can support such a policy.

- The targeting of exchange rates rather than inflation rates likely would make the inflation rate and nominal interest rate more subject to shocks that would more frequently de-stabilize the money demand.

- This suggests that inflation rate targeting policies would tend to decrease uncertainty in the money market relative to exchange rate policies, and that an inflation target objective would be more easily accomplished in that it would induce less shocks to money demand.